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ABSTRACT

The Kaufman-Assessment Battery for Children (K-ABC), a new individually administered intelligence and achievement instrument, includes several subtests on which the examiner may teach the task to the subject. The purpose of this study was to determine if teaching or training could influence the test outcome and thus, lower the reliability of the instrument. This study assessed the potential impact of teaching on the three sequential processing subtests of the K-ABC (Hand Movement, Number Recall, and Word Order). The subjects were 22 students diagnosed as educable mentally handicapped (EMH). They ranged in age from 6.5 years to 12.25 years and were enrolled in self-contained EMH class placements in the rural midwest. The control group was provided a minimal amount of training while the experimental group received extensive, standardized instruction. A statistically significant difference (P=.05) between the intelligence quotient (IQ) scores obtained for both groups was found with the experimental group scoring an average of 6.73 IQ points higher than the control group. Further research is suggested to determine if similar results apply to other groups and also whether similar results will be found when using other mental processing subtests on the K-ABC. (PN)

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Effects of Teaching on the Sequential Processing Subtests of the K-ABC

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RUNNING HEAD: Effects of Teaching K-ABC

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ABSTRACT

The Kaufman-Assessment Battery for Children (K-ABC), a new individually administered intelligence and achievement instrument, includes several subtests on which the examiner may teach the task to the subject. This study assesses the potential impact of teaching on the three sequential processing subtests of the K-ABC with educable mentally handicapped (EMH) subjects. The control group was provided a minimal amount of training while the experimental group received extensive, standardized instruction. A statistically significant difference (P=.05) between the IQ scores obtained for both groups was found with the experimental group scoring an average of 6.73 IQ points higher than the control group.

The Effects of Teaching on the Sequential Processing Subtests of the K-ABC

An aspect of the Kaufman Assessment Battery for Children (K-ABC) which has received considerable attention since its introduction, is the inclusion of teaching or training items on the Mental Processing subtests. Teaching is permitted during the unscored sample item, and during the first two actual items administered to each child should it be necessary. Kaufman's intention is to ensure that each child has a fair chance to understand each task. The nature of the teaching is outlined in the Administration and Scoring Manual (Kaufman & Kaufman, 1983). However, examiners are given freedom to structure the teaching in any manner desired as long as toys or other materials are not used. If the child fails a sample or teaching item, the examiner must teach the task. He may change the item wording, demonstrate the task, use a foreign language, use simplified words, write out the instructions, or use signing and gestures. These instructions are by themselves confusing as separate materials would be required in order to write out the instructions should the examiner choose to do so. Kaufman goes on to suggest that elaborate or lengthy techniques should be avoided and that teaching should only take a couple of minutes (Kaufman & Kaufman, 1983).

The K-ABC was standardized utilizing teaching items. Failure to follow procedure would violate the test norms. However, the flexibility that is provided the examiner may, in essence, violate

the concept of standardized testing. Chronbach (1970) clearly indicates that "a standardized test is one in which the procedure, apparatus, and scoring have been fixed so that precisely the same testing procedures can be followed at different times and places. Every condition that affects performance must be specified if the test is to be truly standardized." This concept is substantiated by Wechsler (1975) who states that "The intention of the battery is to assess a child's performance under a fixed set of conditions. The examiner must not change the phrasing of a test item, spell a word, or provide assistance beyond permissible bounds." The permissible bounds for the WISC-R are stated in the manual, while Kaufman provides only broad and general guidelines, standardized neither in content nor in format. This allows the examiner to improvise directions and instructions differently for each child. When the examiner supplements directions "he is in effect creating a new test. The change may get better information but the norms for the original test cannot be used, and the test really should be given a new name so that no one will be misled" (Chronbach 1970).

By allowing examiners to develop their own teaching or training procedures, it appears that Kaufman may be allowing entirely new tests to be developed; ones which may not be appropriately compared to the norm tables. There is no reason to believe that a-l examiners will approach the task of teaching in a similar manner. While some evaluators may be quite concerned about a child's functioning and

thus teach items in a thorough and complete manner, others may expend only minimal effort to meet the K-ABC guidelines. This lack of standardization in procedures combined with the discrepancy between examiners prompted this preliminary investigation. It is the purpose of this study to determine if teaching or training could influence the test outcome and thus, lower the reliability of the instrument.

METHOD

SUBJECTS

The subjects were 22 students (12 males and 10 females) who had been diagnosed as educable mentally handicapped (EMH) according to the Rules and Regulations to Govern the Administration and Operation of Special Education in Illinois. They ranged in age from 6.5 years to 12.25 years with a mean age of 9.78 years (SD=1.74 years) and were enrolled in self contained EMH class placements in the rural midwest. EMH students were selected because it was felt that a population of subjects with lower than average IQ would be most likely to benefit from teaching and training. Any differences resulting from teaching at this level would be critical, as special education placement could be influenced by any fluctuations in scores.

Subjects were randomly assigned to either the control or experimental group. Each student was then randomly assigned to one of three examiners who was trained to administer the K-ABC. Each examiner administered the instruments alternating between

random and control subjects. The testing was conducted during the regular school day in the subject's school. Evaluations lasted for approximatley 15 minutes and were all performed within a 14-day period.

Intelligence test scores from the child's most recent psychological evaluation were collected from school records after the testing was completed. Either a Stanford-Binet or WISC-R Full scale IQ score was obtained.

The three sequential processing subtests (Hand Movement, Number Recall, and Word Order) of the K-ABC were administered to each subject. The control group received only the minimal amount of teaching required for the subject to function satisfactorily on the teaching items. If the student did not have difficulty on a sample or teaching item, no teaching was performed. The experimental group received predetermined instruction on all sample and teaching items.

On the Number Recall subtest, the examiner first administered the sample item. The subject was then given two more sample items to complete before the actual test began. The examiner did not continue until the child performed all samples correctly. For the first two test items, the children were given one extra sample after each test item to insure that the student understood the task.

The sample item on the Word Order subtest was administered according to directions. The child was then instructed to touch

all of the shapes two more times followed by touching two shapes in sequence five times. If the child had difficulty, the task was repeated. The same procedure was followed for the first two teaching items.

In all cases, the teaching tasks took only a few minutes. The times were well within the guidelines suggested in the K-ABC Administration and Scoring Manual (Kaufman & Kaufman 1983).

RESULTS AND DISCUSSION

No significant difference was noted between the mean IQ of 67.54 (SD = 11.61) for the control group, and 64.54 (SD = 10.92) for the experimental group. These IQ scores were then used as the covariable in an Analysis of Variance (ANOVA) comparing the results of the three sequential processing subtests along with the overall sequential processing score for the experimental and control groups.

No significant differences were found between the control and experimental groups for any of the three subtests. However, when the three subtests were combined to obtain the Sequential Processing

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Table 1 About Here

Score, a significant difference was found between the groups.

Comparison of the groups for the individual subtests suggests that for each subtest, the experimental group consistently scored a minimum of one point higher than the control group. Although these differences were not individually significant, the total

impact of the three combined scores provide an overall significant score for the Sequential Processing composite score. This is a real difference of 6.73 IQ points.

This interaction has important implications for clinicians. Teaching and training on K-ABC test items has the potential of influencing the outcome of the total test to a significant degree. While the study only examines the effect of teaching on the three sequential processing subtests, there are seven other mental processing subtests which allow teaching. Should the results also be generalizable to these seven areas, then the impact could be far more significant. While the authors must reiterate that the children in the experimental group received teaching on all three subtests despite the fact that they did not necessarily fail one of the teaching items, the possible effects of teaching should be addressed. Whenever a teaching item is failed, teaching must take place. Depending on the examiner, the technique, or the amount of teaching, the results of the test can be significantly altered.

The effect on test reliability is a major factor. While a standardized test is designed to be administered and scored in a consistent manner, the concept of standardization is being violated on the teaching subtests. A source of variation is introduced which is essentially uncontrollable. By affording examiners the latitude to teach items as they see fit, Kaufman is allowing them to develop their own directions, each with unknown impact on the test results.

Because the Sequential Processing score makes up approximately one-half of the Mental Processing Composite (MPC), there is potential for influencing the MPC score. Thus, it is quite conceivable that in situations where scores are used as partial criteria for decision making, the decisions made may be influenced. For example, many states utilize cut off scores for placement in particular special education placements (i.e., an IQ of 70 or below for placement in an EMH program). A discrepancy of 6.73 points could influence the decision for placement. Should these results hold true for all mental processing subtests, the discrepancy may be greater than presently reported.

The results of this study are based on research undertaken with a specific population--that is, Educable Mentally Handicapped students. This population is known to have a more restricted range of abilities than the population in general. These results are not intended to be generalized to the population as a whole. Further research is suggested to determine if similar results apply to other groups and also as to whether similar results will be found when using other mental processing subtests on the K-ABC. Until these results are obtained, clinicians and researchers would be well advised to use caution when interpreting the results of the K-ABC and using these results to make decisions for placement purposes.

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Table 1

Comparison of K-ABC Mean Scales for Experimental and Control Groups

	$\bar{X}$ Experimental	$\bar{X}$ Control	F
Hand Movements	5.90	4.81	2.44
Number Recall	5.27	4.00	1.31
Word Order	4.09	2.82	3.51
Sequential Processing Score	70.27	63.54	4.25*

*p = .05